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Lauritz A. Jensen
Brigham Young University

Jordan C. Pederson
Utah Division of Wildlife Resources

Ferron L. Andersen
Brigham Young University

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PREVALENCE OF *ELAEOPHORA SCHNEIDERI* AND *ONCHOCERCA CERVIPEDIS* IN MULE DEER FROM CENTRAL UTAH

Lauritz A. Jensen¹, Jordan C. Pederson², and Ferron L. Andersen¹

ABSTRACT.— Thirteen of 265 deer (4.9 percent) from central Utah were positive for *Elaeophora schneideri*, and 180 (67.9 percent) were infected with *Onchocerca cervipedis*. The rate of infection for *E. schneideri* and *O. cervipedis* increased significantly with age of the host (chi-square of 17.5 and 15.5, respectively, $p < 0.005$). The lack of elaeophorosis in elk from the region is presumably due to the low density of the parasite in mule deer.

The arterial worm (*Elaeophora schneideri*) is enzootic in mule deer (*Odocoileus hemionus*), elk (*Cervus canadensis*), and other ruminants in the Rocky Mountain area (Hibler and Adcock 1971, Worley 1975), although the prevalence and geographic distribution in Utah is largely undetermined. From 1978 to 1981 biologists of the Utah Division of Wildlife Resources (DWR) identified the arterial worm in one calf and one bull elk from southern Utah and detected microfilariae of *E. schneideri* in 19 of 37 mule deer from the same locality (Coles 1982, pers. comm.). Additionally, from 1978 to 1981 DWR personnel recovered the filarial nematode in three blind moose and one moose with normal sight in northern Utah (Babcock 1982, pers. comm., Kimball 1982, pers. comm.). In contrast, of 23 adult elk and seven calves examined by the authors and DWR officers in central Utah during summer 1981, none manifested clinical signs of elaeophorosis (unpubl. data).

Mule deer are apparently the normal definitive host for *E. schneideri*, and the adult worms are predominately located in the arteries of the neck. Elk and moose, on the other hand, represent abnormal hosts, and are severely affected by the larval stages found in the cephalic arteries, arterioles, and capillaries. Heavily infected elk calves frequently die 7 to 10 days after infection (Hibler 1981). Other symptoms of elaeophorosis in elk and moose include damage to the central nervous system, nystagmus, blindness, cropping of the ears, deformity of the antlers, necrosis of the

muzzle and nostrils, and emaciation (Hibler and Adcock 1971, Worley et al. 1972).

The legworm (*Onchocerca cervipedis*) is another filarial nematode enzootic in mule deer in the Rocky Mountains (Walker and Becklund 1970). Adults of the legworm may cause inflammation in the subcutaneous tissue (Wehr and Dikmans 1935); however, infections generally are not clinically significant (Senger 1963). The present study was undertaken to determine the occurrence of *E. schneideri* and *O. cervipedis* in deer from central Utah.

Samples of skin from the muzzle of 265 deer were macerated in physiological saline and examined for microfilariae of *E. schneideri* and *O. cervipedis* following generally the procedure described by Weinmann et al. (1973). The animals were hunter-killed in autumn 1981 in the counties of Carbon, Duchesne, Emery, Juab, Sanpete, Utah, and Wasatch.

Thirteen of the 265 deer (4.9 percent) were positive for *E. schneideri* and 180 (67.9 percent) were infected with *O. cervipedis* (Table 1). Deer positive for both parasites were recovered from all counties listed above. The rate of infection for the arterial worm and the legworm increased significantly with age of the host (chi-square of 17.5 and 15.5, respectively, $p < 0.005$).

The apparent lack of elaeophorosis in elk in central Utah may be related to the low density of the parasite in mule deer from the region. The high rate of infection for both species of roundworms demonstrated in older

¹Department of Zoology, Brigham Young University, Provo, Utah 84602.

²Utah Division of Wildlife Resources, 1115 North Main, Springville, Utah 84663.

TABLE I. Prevalence of *Elaeophora schneideri* and *Onchocerca cervipedis* in mule deer from Central Utah.

Age of deer	Number of deer examined	Deer infected with <i>E. schneideri</i>		Deer infected with <i>O. cervipedis</i>	
		Number	Percent	Number	Percent
Yearlings	175	2	1.1	105	60.0
2-3 years	27	2	7.4	21	77.8
>3 years	63	9	14.3	54	85.7
Total	265	13	4.9	180	67.9

animals is presumably related to the time of exposure in the enzootic area. Yearlings are apparently not refractory to either parasite.

Voucher specimens: microfilariae of *E. schneideri* and *O. cervipedis* USNM Helm. Coll. No 76931.

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